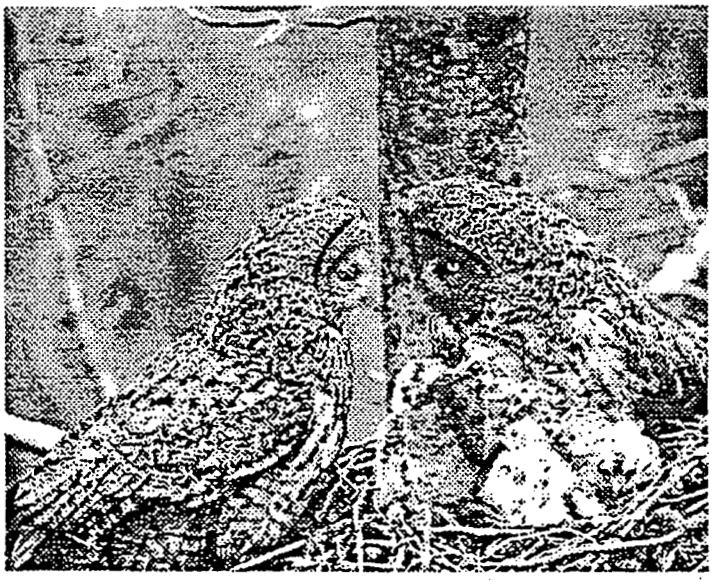
Environmental Restoration Program



Monthly Report for October 1992

Rocky Flats Office

November 20, 1992

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EXECUTIVE SUMMARY

SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR SEPTEMBER 1992

On October 28, 1992, the OU 1, 881 Hillside, Draft RFI/RI Report was delivered to Environmental Protection Agency (EPA) and Colorado Department of Health (CDH), fulfilling DOE's IAG milestone obligation. The Draft RFI/RI Report was prepared in accordance with EPA Guidance and is based on findings from the 1991-92 field investigation. The field investigation was scoped and developed in the Work Plan; an IAG milestone document that was submitted to EPA and CDH in April 1991. The Draft RFI/RI Report will serve as a primary source of information for developing successor documents including: the CMS/FS, the Proposed Remedial Action Plan, and the Record of Decision.

Overall, the Draft OU 1 RFI/RI Report indicates that the extent of contamination and the associated human and ecological risk are not as extensive as once postulated. Considering the absence of a significant ground water migration pathway from Individual Hazardous Substance Site (IHSS) 119.1, and the existence of the french drain/collector well system, the 881 Hillside poses a low threat for contaminant migration offsite.

The OU 2 Pilot Test Plan, In Situ Volatilization Technology, Subsurface Interim Measure/Interim Remedial Action (IM/IRA), was delivered to the regulatory agencies on October 29, 1992, which complies with the added IAG milestone. The plan, once approved, is scheduled to be implemented in September 1993. This is the first of three pilot test plans that will be implemented to gather test data in support of the remedial action decision at OU 2.

OU 3 fall aquatic ecological sampling started October 2, 1992, and was completed October 29, 1992. The Environmental Evaluation (EE) and the surface water sampling by USGS of the three offsite reservoirs (Standley, Great Western, and Mower) were completed on October 23, 1992.

Sampling of the soil trenches in OU 3 was completed on October 28, 1992. Approximately 40 surface soil sampling locations remain to be sampled along with the air sampling to complete OU 3 field work.

A meeting to discuss future land use of the Great Western Reservoir Management Plan under the Option B Program was held October 29, 1992, with DOE, EG&G, and the city of Broomfield. A risk scenario will be included in the OU 3 RI Report evaluating the risk generated by draining the reservoir.

Significant progress was made in the OU 4 assessment project during October that will enable field work to begin in November or December, 1992. Progress included: development and finalization of the OU 4 Phase I RFI/RI Work plan "Implementation Plan"; approval of the Health and Safety Plan (HSP) on October 28, 1992, and completion of the draft Vadose Zone Characterization Technical Memorandum (TM) for OU 4. A physical walkthrough was conducted by EG&G on the RFI/RI at Pond 207 A on October 27, 1992, to evaluate the feasibility of getting a drilling rig into Pond 207 A; it was determined to be feasible to drive the drilling rig into Pond 207 A.

Final Phase I RFI/RI Work Plans were submitted on schedule during October for OUs 12, 13, 14, and 15. A total of six IAG milestones were accomplished on schedule in October, 1992.

PROBLEMS AND PROGRAMMATIC ISSUES

Procurement Status

EG&G Procurement developed an informational briefing on the Master Task Subcontract (MTS) for technical Environmental and Waste Management (E&WM) personnel. The 2-hour session was presented on October 21 and 28, 1992, and again on November 5, 1992. The briefing included a background and history of the development of the MTS concept, lessons learned with the previous Basic Ordering Agreement (BOA), advantages of the MTS, key MTS features, and projected procurement lead times. Also included was an MTS desk reference covering Statements of Work (SOWs), technical evaluations, and task order performance evaluations. Each session was followed by a question and answer period. Over 60 E&WM personnel attended the three sessions.

EG&G's Environmental Restoration Management (ERM) organization developed and distributed a new MTS checklist as a guide for technical staff. The checklist provides step-by-step instructions for developing a "Procurement Package" for award under the MTS. The checklist will be distributed to all technical personnel in November, 1992.

ERM subcontractors are required to submit monthly Task Order Status Reports to both the Procurement Subcontract Administrator (SA) and the ERM Contract Technical Representative (CTR). The report is intended to supplement, not replace, the need for frequent verbal communications with the subcontractor. The report was designed to be a useful management tool and source of historical written project documentation. A review is currently underway to evaluate the usefulness and completeness of the data submitted in the report. If the need for additional or more specific data is identified by the project managers, the format will be modified accordingly.

To date, a number of new subcontract actions have been submitted to Procurement under the MTS and several have been awarded. However, time needed to process an award has taken longer than expected. The primary delays experienced are because of longer than expected processing time on initial Organizational Conflict of Interest (OCI) approvals and extensive negotiations with subcontractors on allowable other direct costs (ODCs). Both ERM and Procurement are documenting problems and issues associated with the MTS award process and expect to see significant improvement in the near future.

Other

OU 2 bedrock field work will be implemented in FY93. This will result in the OU 2 Corrective Measures Study/Feasibility Study (CMS/FS) being delayed approximately 15 to 22 months. The total OU 2 milestone schedule is

currently being evaluated.
Significant schedule impacts have resulted in OU 3 from the slow pace of obtaining Use Agreements from offsite landowners. The difficulty in obtaining Use Agreements was caused by offsite landowners being reluctant to allow surficial soil sampling of their property. Impacts to future IAG milestones (Draft and Final RI Reports) and new schedules are being evaluated.

The OU 4 Draft Phase I RFI/RI Report, which is scheduled for submittal on May 21, 1993, and the OU 4 Final Phase I RFI/RI Report, which is scheduled for submittal on October 18, 1993, will be missed by approximately 12 to 14 months due primarily to the delays encountered in removing pond sludge from the solar ponds. An additional six OU 4 milestones could be missed if modifications to work plans are not successfully negotiated with DOE, EPA, and CDH.

DOE has discussed the OU 4 projected missed milestones with the regulatory agencies. DOE/HQ is currently reviewing several "restructuring" options for the Solar Ponds Program. A decision on how to proceed is expected in November, 1992.

DOE, EPA, and CDH are considering a proposal to integrate characterization activities within the industrial area (IA). This concept would impact scheduled field work activities in OUs 8, 9, 10, 12,13, 14, and 15.

NEAR-TERM IAG MILESTONES

OU	Milestone Description	Schedule Completion	Actual Completion
12	Submit Final Phase I RFI/RI Work Plan	05 Oct 92	05 Oct 92
13	Submit Final Phase I RFI/RI Work Plan	12 Oct 92	12 Oct 92
14	Submit Final Phase I RFI/RI Work Plan	19 Oct 92	19 Oct 92
15	Submit Final Phase I RFI/RI Work Plan	26 Oct 92	26 Oct 92
01	Submit Draft Phase III RFI/RI Report	28 Oct 92	28 Oct 92
02	Submit Subsurface Site 1 Draft Test Plan	29 Oct 92	29 Oct 92
08	Submit Final Phase I RFI/RI Work Plan	01 Dec 92*	

**EPA and CDH approved an extension on the OU 8 Final Phase I RFI/RI Work Plan from September 28, 1992, to December 1, 1992*

SECTION 1. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for October 1992. This program implements the Inter Agency Agreement (IAG) among the U.S. Department of Energy, the U.S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess, and remediate, where necessary, contaminated areas at or adjacent to DOE's Rocky Flats Plant in Golden, Colorado. This agreement was signed on January 22, 1991. The work is being performed for DOE by EG&G Rocky Flats, Inc.

Technical progress, schedule status, and milestone status for each Operable Unit (OU) as well as other program activities are presented in Section 2.0. Section 3.0 contains the schedules for routine environmental sampling as required by Paragraph 210 of the IAG. Section 4.0 contains a list that identifies the contractors and subcontractors performing work on the program as required by Paragraph 13 of the IAG.

SECTION 2. PROJECT STATUS

2.1 OU 1 - 881 HILLSIDE AREA

The alluvial ground water at the 881 Hillside Area, located north of Woman Creek in the southeast section of RFP, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is almost 2 miles from the eastern, outer edge of the plant's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSSs) that make up OU 1 are being investigated and treated as high-priority sites because of elevated concentrations of organic compounds in the near-surface ground water and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface ground water flowing from the OU 1 area. The near-surface water is treated at the 891 treatment facility, designed for this purpose, and released on-site into the South Interceptor Ditch alongside Woman Creek. IRA construction was completed in April 1992. The Remedial Investigation and Feasibility Study (RI/FS) to determine the final remedial action are continuing in parallel with the IRA.

2.1.1 OU 1 ASSESSMENT

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
Submit Final Phase III RFI/RI Work Plan	31 Oct 90
Submit Draft Phase III RFI/RI Report	28 Oct 92

October Work Activity Status

On October 28, 1992, the OU1, 881 Hillside, Draft RFI/RI Report (i.e., the Draft RFI/RI Report) was delivered to EPA and CDH, fulfilling DOE's IAG milestone obligation. The Draft RFI/RI Report was prepared in accordance with EPA Guidance and is based on findings from the 1991-92 field investigation. The field investigation was scoped and developed in the Work Plan; an IAG milestone document that was submitted to the regulatory agencies in April 1991. The Draft RFI/RI Report will serve as a primary source of information for developing successor documents including: the CMS/FS, the Proposed Remedial Action Plan, and the Record of Decision.

Overall, the Draft RFI/RI Report indicates that the extent of contamination and the associated human and ecological risk are not as extensive as once postulated. Considering the absence of a significant ground water migration pathway from IHSS 119.1 and the existence of the French drain/collector well

system, the 881 Hillside poses a very low threat for contaminant migration offsite.

The Draft RFI/RI Report, which encompass 14 volumes, reports on the findings of comprehensive field investigations designed to assess the potential impacts of contamination arising from OU 1 to air, surface soils, subsurface soils, ground water, surface water, and sediments. Major findings detailed in the Draft RFI/RI Report include:

Ground water contamination is localized to a relatively small area directly beneath IHSS 119.1. Significant ground water contamination is limited to Volatile Organic Compounds (VOCs), some of which are present at concentrations exceeding regulatory compliance thresholds (e.g., carbon tetrachloride and perchloroethene are reported in the tens of parts-per-million range).

There exists very little actual "ground water" beneath OU 1 that is vulnerable to impact. The eastern portion of the site is characterized by generally dry conditions. Ground water is seen to occur periodically as "wet zones" rather than saturated porous media subject to hydraulic forces. This is a major reason why contamination has not migrated beyond the general vicinity of IHSS 119.1. Additionally, aquifer and soil properties in the eastern portion of the site are not conducive to porous system flow. Traditional ground water does exist on the western portion of the site; however, it is not significantly impacted by contamination. Water level measurements made since installation of the French drain suggest that the western portion of OU 1 is drying out similar to the eastern segment.

Surface soils have been impacted by polycyclic aromatic hydrocarbon (PAH) compounds. PAHs are fairly evenly distributed across the surface site. Their occurrence does not appear to be waste-activity related. Rather, PAHs in surface soils are probably the result of vehicular exhaust or possibly from the use of asphalt paving in nearby facilities such as parking lots which drain to this area.

Local air, subsurface soils, sediments, and surface waters in the South Interceptor Ditch (SID) and Woman Creek do not appear to be impacted by OU 1.

The human health risk assessment findings demonstrate the following:

Current offsite risks to the public and risks to onsite workers are well below the region of concern for the regulatory agencies (i.e., well below 1E-6).

Risks to hypothetical future-use residents (e.g., residents homesteading right on OU 1) range from 1E-5 to 1E-3. This

range spans the typical to near worst-case spectrum. Interestingly, quantitative uncertainty analysis indicates that the range of uncertainty in these risk estimates spans approximately three to five orders of magnitude (1,000 to 100,000). This may call into question the hypothetical future-use risk analysis as a reliable datum for decision making.

Risks to hypothetical future-use workers (including a research biologist) would be on the order of 1E-5, which is within the range of acceptability for the regulatory agencies.

Findings of the Ecological Evaluation suggest that overall, contamination at OU 1 has not adversely impacted the local ecology. Several localized areas of concern were identified.

Work on the draft CMS/FS continues. Initial effort will be directed toward refining ARARs and developing Preliminary Remediation Goals.

On October 13, 1992, DOE petitioned EPA and CDH for a 90-day extension on all IAG deliverables downstream of the Draft RFI/RI Report. Currently, the IAG milestone date for the Draft CMS/FS-EA is March 31, 1993; our schedule petition requested a date of June 30, 1993.

Planned Work for November

Continue preliminary work on the Draft CMS/FS Report that is scheduled for submittal on March 31, 1993.

Problems

None

Open Items

Approval of the OU 1 IAG schedule extension by EPA and CDH is pending. A request has been made for a 90-day extension of the IAG milestone date for submittal of the Final Phase III RI Report on April 4, 1992.

2.1.2 OU 1 REMEDIATION

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Proposed IM/IRA Decision Document	18 Sep 89
Submit Proposed IM/IRA Decision Document	06 Oct 89
Submit Final IM/IRA Decision Document	05 Jan 90
Begin Phase I-A IM/IRA Construction	15 Jan 90
Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90

Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
Submit IM/IRA Implementation Document	22 Feb 91
Begin Phase II-A IM/IRA Construction	01 Apr 91
Begin IM/IRA Testing	05 Aug 91
Begin Phase II-B IM/IRA Construction	03 Sep 91
Complete IM/IRA Construction (Bldg. 891)	02 Mar 92
Complete IM/IRA Construction (French Drain)	13 Apr 92

October Work Activity Status

The total treated ground water collected is approximately 602,500 gallons, and the total discharged treated ground water is approximately 634,000 gallons. The remaining water is being held in effluent tanks awaiting results of sample analysis. Tank 205 was removed from service to allow for a routine internal inspection to check the condition of the tank's coating.

Discharge of Effluent Tank 207 began October 26, 1992. During the discharge, approximately 14,000 gallons of treated water was released to the SID daily until the 150,000 gallon tank was completely empty. Discharge will be completed on November 3, 1992. The water ran through the UV/Peroxide Unit prior to discharge to remove any organics that might have leached into the water from the tank's coating. DOE and the regulatory agencies have granted permission to allow future discharge from effluent tanks without a second treatment cycle. The organic contamination from the tank's coating has proven to be well below acceptable discharge levels.

Repair and retest of the French drain influent piping for leaks was completed October 28, 1992. The influent pipe that connects the French drain with the treatment plant is 2,000 ft. long.

The Building 881 footing drain that is clogged with tree roots is being cleaned out. RFP personnel monitored the work to ensure that there were no impacts to the French drain. The 881 footing drain discharges to the west end of the French drain.

When the French drain was built on the 881 Hillside, much of the vegetation was destroyed. At the request of EPA, a revegetation project was implemented, and the initial phase of seeding was very successful. During the week of November 6, 1992, the final phase of revegetation is scheduled. A native seed mix will be spread and approximately 100 trees (2' - 4') will be planted on the hillside. The dying barley that was planted early in the summer will serve as a mulch for the new vegetation.

Planned Work for November	Continue treating and discharging water collected in the French drain. Complete the final phase of revegetation on the 881 Hillside.
Problems	None
Open Items	None

2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES

The contamination at the 903 Pad and Mound areas is largely attributed to the storage in the 1950s and 1960s of waste drums that corroded over time, allowing hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent, some of which may have contaminants that were not removed by the treatment system.

An IM/IRA provides for surface water in source areas of contamination to be collected, treated, and discharged to the surface water drainage. Operation of a field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process will be evaluated at three locations: the entrance to the treatment facility, several points within the facility, and the discharge point. After completion of the field-scale treatability tests, the unit is anticipated to remain in service until the final remedial action is operational. The RI and FS are continuing in parallel with the IRA.

A second IM/IRA was established in late-1991. This Proposed Subsurface Investigation Interim Measure/Interim Remedial Action Plan/Environmental Assessment (IM/IRAP/EA) is north of Woman Creek and encompasses the 903 Pad, the Mound Area, and the East Trenches Area of OU 2. This IM/IRAP/EA identifies and evaluates IRAs for removal of residual free-phase VOC contamination from three distinct subsurface environments at OU 2. Each of the proposed VOC-removal actions involve in situ vacuum-enhanced vapor extraction technology. The IRAs are proposed for the collection of information that will aid in the selection and design of final remedial actions that address subsurface, residual free-phase VOC contamination at OU 2.

2.2.1 OU 2 Assessment

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91
Submit Subsurface Site I Draft Test Plan	29 Oct 92

October Work Activity Status

DOE and EG&G held a Remedial Investigation (RI) Alluvial Report update with the regulatory agencies on October 5, 1992. Preliminary site characterization data from the alluvial field investigation was presented. These findings were used to present a revised schedule for the OU 2 Bedrock field investigation program and to continue to define the revised bedrock scope of work. At a meeting held on October 27, 1992, EG&G and DOE identified tasks to be included in the revised Bedrock Work Plan. DOE and EG&G are outlining an overall OU 2

schedule strategy to present to the regulatory agencies at the project management level on November 9, 1992. This schedule strategy delays the implementation of the bedrock field work until Fiscal Year (FY)93, reschedules the CMS/FS 15 to 22 months into the future, and impacts the overall OU 2 milestone schedule. A final schedule will be delivered to the regulatory agencies by way of a revised Phase II Bedrock Work Plan by March 1993.

The SOW for the CMS/FS is complete and is being held until the schedule for OU 2 is reestablished. The contract will be awarded under the new MTS system.

The Draft Final of TM #5, *Exposure Scenarios*, is being held by EPA. The regulatory agencies will not review the document until DOE presents a completely new IAG schedule for OU 2. DOE is outlining an overall OU 2 schedule strategy to present to the regulatory agencies on November 9, 1992.

Planned Work for November

Present a revised Phase II RFI/RI bedrock scope to the regulatory agencies on November 9, 1992.

Problems

Delaying the bedrock field work until FY93 has resulted in the CMS/FS being delayed 15 to 22 months. These delays may impact the total OU 2 milestone schedule.

Open Items

Evaluation of an extended OU 2 IAG milestone schedule by EPA and CDH is planned following DOE submittal in November.

2.2.2 OU 2 Remediation

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
Submit Draft Responsiveness Summary	13 Dec 90
Submit Final Responsiveness Summary and Final IM/IRA Decision Document	11 Jan 91
Field Treatability Test System Installation Complete	10 May 91
Begin Field Treatability Testing (Carbon System)	13 May 91
Submit Draft Treatability Test Report (Phase I GAC)	01 Apr 92
Complete IM/IRA Construction (radionuclides removal system)	24 Apr 92

Begin Field Treatability Testing (radionuclides removal system) 27 Apr 92
Submit Final Treatability Test Report (Phase I GAC) 02 Jun 92

October Work Activity Status

Surface Water IRA. The Surface Water Field Treatability Unit (FTU) collected, treated, and discharged approximately 467,950 gallons of surface water during October. Twenty-four hour manned operation continues without problems. Three collection points are pumping surface water for treatment, as required. Influent flows increased significantly in October due to increased precipitation (average of 10.8 gpm). One drum of sludge was produced and sampled during the month of October, 1992.

All the sludge and filter sock drums were transferred from the FTU 90-day storage area to the interim storage area (RCRA Unit 18.04). However, the four granular activated carbon (GAC) Cyclesorb Units located at the 90-day storage area will remain there until permission is obtained from the OnSite Transportation Committee to relocate these units to Unit 18.04.

Work to winterize the SW132 collection facility was initiated and completed in October. The SW132 collection facility transport pipe developed a leak at a construction joint on October 25, 1992. Repair work was completed on October 26, 1992, resulting in 24 hours of SW132 operation downtime.

The bench scale equipment (Memtek Unit and Reverse Osmosis [RO] Unit) have been transferred from the Protected Area (PA) to the FTU. The equipment will be set up within the GAC trailer, and a work plan will be developed to conduct bench scale studies. These studies are designed to improve FTU systems operation.

RFP personnel continue to study the FTU effluent with the Hiac/Royco particle counting equipment. The testing is being conducted in accordance with the experimental plan and is going well. This technology may help evaluate and maximize the efficiency of the FTU system.

A seep has developed adjacent to SW59. Realignment of the road to prevent further damage to the source of the seep is currently awaiting NEPA approval. Also, preparation of an IWCP to investigate and resolve the problem has been initiated.

Subsurface IRA. The Pilot Test Plan, In Situ Volatilization Technology, Subsurface Interim Measure/Interim Remedial Action (IM/IRA), was delivered to the regulatory agencies on October 29, 1992, which complies with the added IAG milestone. The plan, once approved, is scheduled to be implemented in September 1993. This is the first of three pilot test plans that will be implemented to gather test data in support

of the remedial action decision. Data gathered by these three OU 2 test plans may eventually enable a direct application of appropriate technologies to other OUs at RFP.

The Pilot Test Plan was also delivered to the Technical Review Group (TRG) on October 29, 1992. A brief presentation of the test plan was made by two EG&G representatives. Review of the plan by the TRG is optional. If the TRG decides to comment on the document, they will submit comments to CDH by approximately November 24, 1992. The TRG comments will be included in the agency comments, which are due to DOE/EG&G on November 26, 1992. The final version of this first test plan is scheduled for submittal to the regulatory agencies on January 12, 1993. Inspection and system start-up to begin pilot testing in the field is scheduled for September 15, 1993.

Planned Work for November

There are 14, 55-gallon drums (poly) of spent liquid hypochlorite solution/RCRA waste material located at the FTU that require movement to an interim storage area. This waste will be moved to the 90-day Storage Area and prepared for ultimate storage at Unit 18.04.

The four (4) spent GAC cyclesorb vessels located at OU 2 will be moved to Unit 18.04 for interim storage.

Problems

None

Open Items

None

2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG directs activities according to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This involves assessment of contamination in offsite areas also referred to as IHSSs: Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay v. U.S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the land owners.

Scope of Work Changes This Period

A risk scenario will be included in the OU 3 RI Report evaluating the risk generated by draining the Great Western Reservoir. The effect this decision will have on the OU 3 project is currently being evaluated. No CERCLA actions are scheduled past the RFI/RI Report. This change in land use will probably require CMS/FS activities to be conducted, and depending upon the risk scenario required, some remediation may be required. The short-term effect will be to increase the uncertainty and complexity of the baseline risk assessment in the RFI/RI Report.

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Past Remedy Report	26 Oct 90
Submit Draft Historical Information/ Preliminary Health Risk Assessment Report	09 Nov 90
Submit Final Past Remedy Report	02 Apr 91
Submit Final Historical Information/ Preliminary Health Risk Assessment Report	16 Apr 91
Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
Submit Final Phase I RFI/RI Work Plan	06 Dec 91

October Work Activity Status

Fall aquatic ecological sampling started October 2, 1992, and was completed October 29, 1992. The EE and the surface water sampling in the three offsite reservoirs was completed on October 23, 1992.

Sampling of the soil trenches in OU 3 was scheduled from October 19 through October 30, 1992, and was completed on October 28, 1992. The TM that outlines the air program and changes that are made to the sampling plan during field work is continuing. This TM is scheduled for delivery to the regulatory agencies by November 20, 1992. Approximately 40 surface soil sampling locations remain to be sampled along with the air sampling to complete OU 3 field work.

A meeting to discuss future land use of the Great Western Reservoir Management Plan under the Option B Program was

held October 29, 1992, with DOE, EG&G, and the city of Broomfield. A risk scenario will be included in the OU 3 RI Report evaluating the risk generated by draining the reservoir. This decision adds scope to the original Work Plan. The effect this decision will have on the OU 3 project is currently being evaluated. No CERCLA actions are scheduled past the RFI/RI Report. This change in land use will probably require CMS/FS activities to be conducted, and depending upon the risk scenario required, some remediation may be required. The short-term effect will be to increase the uncertainty and complexity of the baseline risk assessment in the RFI/RI Report.

Work continued on EPA's request to draw a line within OU 3 that determines where construction activities may or may not occur. EPA wants this boundary enforced by DOE until completion of the RFI/RI activities. A risk line based on CERCLA risk " point of departure" of IE-6 was determined. This line is calculated at 2.6 pCi/g under a residential scenario. This 2.6 pCi/g line is within the Settlement Agreement lands. A recreational scenario was also developed at the IE-6 Level which falls well within plant boundaries.

Planned Work for November

Continue work on the TM outlining the air program and changes made to the sampling plan during field work. This TM is scheduled for delivery to the regulatory agencies by November 20, 1992.

Continue efforts to obtain signed land use agreements from private landowners.

Problems

Significant schedule impacts have resulted from the slow pace of obtaining Use Agreements from offsite landowners. The difficulty in obtaining Use Agreements was caused by offsite landowners being reluctant to allow surficial soil sampling of their property. Impacts to future IAG milestones and new schedules are being evaluated.

Open Items

None

2.4 OU 4 - SOLAR EVAPORATION PONDS

OU 4 is made-up of five solar evaporation ponds: 207A, 207B series (north, center, south), and 207C. Beginning in the late 1950s, the ponds were used to store and evaporate low-level radioactive process water containing high concentrations of nitrates and treated acidic wastes. The sludge and sediments that resulted from the process were periodically removed and disposed of at the Nevada Test Site.

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and ground water was detected. Interceptor trenches were installed in 1971 to collect and recycle ground water contaminated by the ponds and to prevent natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were replaced by the current, larger, interceptor trench system which recycles approximately 4 million gallons of ground water a year back into the solar evaporation ponds.

No additional process water has been pumped into the ponds since 1983. The interceptor trench system collects and recycles ground water into the solar evaporation ponds continuously. Presently, only the 207B north solar evaporation pond receives contaminated ground water collected by the interceptor system. The ponds are RCRA interim status regulated units that are currently under closure. In order to proceed and characterize the level of contamination at the site, approximately 8 million gallons of excess liquid in the ponds must be removed. The removal of this liquid and the redirection and treatment of the ground water by the interceptor trench system are the focus of the final IM/IRA, dated April 1992, which began construction in May 1992.

The April 1992 IM/IRA was developed as a regulatory agency requirement that was out of scope from the tasks outlined in the IAG. DOE attempted to modify an existing permit for water removal and treatment for liquids in the solar ponds and ground water collected by the intercepter trench system, but the regulatory agencies rejected permit modification and required development of an IM/IRA to document operation and use of the proposed water treatment system. The development and implementation of this IM/IRA precedes the IAG scheduled Phase I RFI/ RI fieldwork.

There is an IM/IRA scheduled in the IAG that will be completed after results are collected and analyzed from the Phase I RFI/RI field work. The first draft of the IAG IM/IRA is scheduled for delivery in April 1994.

2.4.1 OU 4 ASSESSMENT

Scope of Work Changes This Period	None	
Technical Approach Changes This Period	None	
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
	Submit Final Phase I RFI/RI Work Plan	26 Nov 91

October Work Activity Status

Several documents were prepared and approved in support of implementing the OU 4 Phase I RFI/RI Work Plan. The following progress has been made in the OU 4 assessment project:

(1) Development of the OU 4 Phase I RFI/RI Work Plan "Implementation Plan." The implementation plan included a Level 5 schedule which is currently being revised and condensed.

(2) The OU 4 assessment HSP was approved October 28, 1992. The HSP was the final document needing approval to complete the integrated work control package for OU 4.

(3) EG&G completed the draft Vadose Zone Characterization TM for OU 4. The Vadose Zone TM was reviewed by DOE and EG&G to expedite the process.

(4) A physical walkthrough was conducted by EG&G on the RFI/RI at Pond 207 A on October 27, 1992. The walkthough was conducted to evaluate the feasibility of getting a drilling rig into Pond 207 A. The exercise was valuable. It is feasible to drive the drilling rig into Pond 207 A.

The field work for OU 4 assessment was initiated during numerous planning sessions. EG&G is scheduled to begin the radiation survey location-survey task on November 6, 1992. This task is a function of placing the radiation survey locations within OU 4. Daily and weekly ground water level measurement will begin approximately November 4, 1992.

Planned Work for November

Continue work on the OU 4 Phase I RFI/RI Work Plan "Implementation Plan."

Continue work on the radiation survey location-survey task on November 6, 1992.

Ground water level measurements will begin November 4, 1992.

Problems

The Draft Phase I RFI/RI Report, which is scheduled for sub mittal on May 21, 1993, and the Final Phase I RFI/RI Report, which is scheduled for submittal on October 18, 1993, will be missed by approximately 12 to 14 months. An additional six milestones in out years are also in jeopardy.

DOE has discussed the projected missed milestones with the regulatory agencies. DOE/HQ is currently reviewing several "restructuring" options for the Solar Ponds Program. A decision on how to proceed is expected in November.

Open Items

The OU 4 milestones schedule and program work scope negotiations are pending.

2.4.2 OU 4 REMEDIATION

Scope of Work Changes This Period	None
Technical Approach Changes	None
IAG Milestone Accomplishments	None
October Work Activity Status	*Program Management.* EG&G has nearly completed the increased staffing of the Solar Ponds Program Office. To date, 24 positions have been filled. Also, a subcontract was awarded to independently review technical and cost aspects of the Haliburton (HNUS) sludge solidification process. The subcontractor presented its initial findings in a briefing to EG&G management. This subcontract is a supplemental contract for near-term evaluations to support decisions on the program's future. Discussions that began during the week of October 5, 1992, among DOE, EG&G, EPA, and CDH for amending the IAG, included the topic of the Solar Evaporation Ponds. Obtaining input from the regulatory agencies and their concurrence with DOE's eventual decision on how to proceed is vital to scoping the program in FY93 and beyond. It appears that the milestones to begin the sludge solidification process and the scheduled date to submit the Phase I RFI/RI Draft and Final reports will not be met. This in turn will impact remediation milestones. However, it may be possible to recover the schedule to meet the milestone for the IM/IRA Decision Document. Changes to the current FY93 budget and scope of work for the OU 4 Solar Ponds Program will be necessary to achieve such a schedule recovery. *Pondsludge HNUS effort.* HNUS efforts continue on the C Pond/clarifier. HNUS moved equipment into Tent six for winter storage and continued erection of the conveyor system. The HNUS schedule is being updated to include the C Pond processing train and all other activities scheduled through November 20, 1992. EG&G is updating the entire C Pond integrated schedule based on current work estimates. *Water Management.* Water management activities continue. The transfer of water from A Pond to B Pond was completed October 23, 1992, 3 days ahead of schedule. A detailed, integrated schedule was developed for all water management activities. The schedule includes completing the installation of the evaporators and modular tanks, as well as the tests and reviews prior to start up.

A draft plan for the entire program for Building 910 evaporators and related systems was completed on October 29, 1992. The plan addresses the component checkout tests and individual systems operations tests already conducted or tests in progress, as well as the Licon-supplied equipment Standard Operating (SO) tests and integrated SO tests.

Planned Work for November

Options will continue to be developed for processing the sludge in the ponds. These options will be discussed with the regulatory agencies in November.

Problems

None

Open Items

None

2.5 OU 5 - WOMAN CREEK

This activity encompasses assessment and remediation in the Woman Creek drainage of 10 IHSSs. They are: Original Landfill (IHSS 115); Ash Pits (IHSS 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSS 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881. Two additional surface disturbances have been identified and are located; one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. Possible contamination in this OU was caused by landfill operations, storm water runoff into holding ponds, and ash-pit operations. Constituents in OU 5 are believed to include nitrates, plutonium, uranium, metals, beryllium, solvents, pesticides, oils, paints, and cleaners. Medias affected include soils, sediments, surface water, ground water, and air resuspension.

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	05 Apr 91
Submit Final Phase I RFI/RI Work Plan	30 Aug 91

October Work Activity Status

The Draft HSP was completed for the EE. EG&G reviewed the draft, and all comments were received and incorporated into the HSP for the EE. The HSP was approved on October 20, 1992, and field activities then commenced.

The approved Final TM#1, *Revised Network Design* – Field Sampling Plan, was delivered to the regulatory agencies on October 16, 1992. The first sampling event of TM #1 is to be implemented the week of November 6, 1992, assuming water flow is occurring in the Woman Creek Drainage. This first sampling event is the synoptic sampling of Woman Creek at base flow conditions. There are 13 sites where water samples will be taken and flow measured and B sediment sampling sites.

Comments were received on September 26, 1992, from EPA and on September 27, 1992, from DOE/HQ on draft TM #2, *Surface Geophysics*. CDH comments were received August 31, 1992, and were incorporated. CDH gave conditional approval, as did EPA, for work to begin after their comments along with comments from HQ were addressed. All comments from the regulatory agencies were addressed on the draft TM #2. The Electromagnetic (EM) and Magnetic survey, which aid in the characterization of the subsurface, began October 13, 1992, with the geophysical survey crews going through the HSP training. The geophysical survey crews began work the next day on October 14, 1992, at the original Landfill IHSSs (IHSS 115).

The draft TM #3, *Surface Soil Sampling at IHSS 155*, was received by DOE on October 12, 1992. Following the incorporation of DOE comments, TM #3 was delivered to the regulatory agencies during the week of October 19, 1992.

The field portion of the High Purity Germanium (HPGe) Survey dealing with the wide spaced grid (150 ft. centers) completed data collection at IHSS 133. A small area east of the Old Landfill (IHSS 115), not covered by the HPGe Survey in 1990, will be completed in the near future. The field work over the closed spaced grid (25 ft. centers) at IHSS 133 began the week ending October 30, 1992, and will be ongoing.

The geophysical surveys, EM and Magnetometer, are in progress at IHSS 133. The field portion of the survey has been completed at IHSS 115.

A drill rig is currently scheduled to arrive at RFP on November 2, 1992. The drill rig will be inspected by EG&G prior to being brought onsite. Drilling is expected to commence November 3, 1992.

DOE and EG&G Ecology and the NEPA Division (END) gave permission on October 26, 1992, for drilling to take place in areas that are not potential habitat areas as shown on a map generated by an expert on Spiranthes diluvialis (endangered species). If drilling is scheduled to occur near potential habitat, a representative from EG&G END will examine the area and either move the location out of the habitat area, confirm it is not a potential habitat area, or postpone the activity until after consultation with the U. S. Fish and Wildlife Services (U. S. F&WS).

Planned Work for November

The following are planned work activities for OU 5:

- Continue surface water and sediment sampling along Women Creek.
- Continue sediment sampling of C1 and C2 Ponds.
- Complete monitoring wells below C1 and C2 Ponds.
- Complete HPGe Survey at the 133 series of IHSS.
- Complete geophysical Surveys at the 133 series of IHSS.
- Approval of TM #3, *Surface Soil Sampling at IHSS 115.*
- Begin soil sampling at IHSS 115 and 133 series of IHSS.
- Conduct Fidler Survey at IHSS 209.

Problems

None

Open Items

RFP is waiting on a response from U. S. F&WS before beginning intrusive activity in potential Spiranthes diluvialis habitat below the CI Pond.

2.6 OU 6 - WALNUT CREEK

This activity encompasses assessment and remediation in the Walnut Creek Drainage of 21 IHSSs. They are the A-series Detention Ponds, Ponds A-1 through A-4 (IHSS 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North, Pond, and South Area Spray Fields (IHSS 167.1, 167.2, and 167.3); the East Area Spray Field (IHSS 216.1), the Trenches A, B and C (IHSS 166.1, 166.2, and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165), and the Old Outfall Area (IHSS 143). One additional site, the Soil Dump Area (IHSS 156.2), was transferred from OU 14 to OU 6 in 1991. Two IHSSs, Property Utilization and Disposal Yard (IHSS 170) and Property Utilization and Disposal Container Storage Facilities (IHSS 174) have been transferred from OU 6 to OU 10. Thirteen ground water monitoring wells will be installed throughout OU 6 to monitor the alluvial aquifer. Five bedrock ground water monitoring wells will be installed in the vicinity of North Walnut Creek during the OU 6 remedial investigation. To characterize the bedrock aquifer in the vicinity of the A-series ponds, up to 9 additional bedrock ground water monitoring wells may be installed.

Sediment samples will be collected from the Walnut Creek drainage where existing data are insufficient to adequately characterize the sediments. Sediment sampling has been proposed along each stream segment on North and South Walnut Creeks where additional characterization is needed. Based on a review of the data collected at the existing locations along the OU 6 drainage, there is sufficient information about the sediments in many parts of OU 6; therefore, the sampling locations specified in the RFI/RI Work Plan have been reduced in those areas.

The surface soil sampling has been modified for the Triangle Area (IHSS 165) and the Old Outfall Area (IHSS 143) so that the surface soil samples specified in the IAG will be obtained from the original surface of these units. This will entail boring through the overlying fill material down to the original surface to collect samples.

Scope of Work Changes This Period	None	
Technical Approach Changes This Period	None	
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	19 Apr 91
	Submit Final Phase I RFI/RI Work Plan	16 Sep 91
October Work Activity Status	Progress continues with OU 6 field activities. Boring locations for soil sampling have been staked. Surface soil sampling is complete at the Sludge Dispersal Area (IHSS 141) and the Pond Area Spray Field (IHSS 167.2). Monitoring well locations were identified and staked out. Pond surface water sampling is complete, and sediment sampling is 80% complete (IHSS 142). The soil gas survey of the Triangle Area (IHSS 165) started October 6, 1992, and is complete. The EM survey over the Trenches Area (IHSS 166) started during the week ending October 9, 1992, is complete. Surface soil sampling is complete on the North Area Spray Field (167.1), and is complete on the East Area Spray Field (IHSS 167.3), and the Soil	

Dump Area (IHSS 156.2). Field sampling for the EE started October 21, 1992. Subsurface Soil Sampling (borings) is underway in IHSS 2167.1.

The HSP for the EE was reviewed and comments were made. EE field operations consisting of testing small mammals for levels of metals and PCB started October 21, 1992.

TM #1, *Addendum to Final Phase I RFI/RI Work Plan*, which describes a reduction in costs and some changes in scope for OU 6, was submitted to the regulatory agencies for review the week ending October 2, 1992. TM #1 recommends and proposes changes to the bedrock and alluvial well drilling program, ambient air monitoring, radiation survey at IHSS 165, and surface water sampling. DOE and EG&G believe that enacting the proposed changes described in TM #1 will scientifically improve the OU 6 Work Plan while significantly reducing the cost to implement the actual work. The overall scope and objectives set forth in the IAG and in the Final Work Plan remain unchanged. Discussions with the regulatory agencies regarding TM #1 were held during the week of October 23, 1992. DOE arranged a meeting with the regulatory agencies and EG&G to address concerns and comments.

Planned Work for November

Continue OU 6 field activities.

Continue EE field operation.

Problems

None

Open Items

None

2.7 OU 7 - PRESENT LANDFILL

The Present Landfill, OU 7 is located north of the plant complex on the western edge of an unnamed tributary of North Walnut Creek and is comprised of two IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill, soils beneath the landfill potentially contaminated with leachate, and sediments and water in the East Landfill Pond. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August of 1968 and was originally constructed to provide for disposal of RFP's nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill, and consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

Scope of Work Changes This Period

None

Technical Approach This Period

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	28 Aug 91

October Work Activity Status

Work continued on the Work Plan Implementation Management Plan for OU 7 and training activities needed to be completed prior to the commencement of field work. A site inspection for soil, gas, and surficial soil sampling teams was made October 30, 1992,

The Site-Specific HSP Implementation of the Phase I RFI/RI Work Plan was submitted for EG&G's review the week ending October 9, 1992. Final comments on the revised HSP were addressed during the week of October 23, 1992, and the HSP was approved on October 29, 1992.

Meetings were held October 12 and October 16, 1992, with DOE and EG&G to define requirements and design strategies necessary for the completion of the EE and the risk assessment sections of the OU 7 Phase I RFI/RI Work Plan for OU 7. Field sampling will be performed this fall. Risk assessment deliverable schedules and scope were finalized on October 16, 1992.

The following two changes to the approved OU 7 Phase I RFI/RI Work Plan were proposed to CDH:
1) Raise the field detection limits for the soil gas survey from 1 part per billion (ppb) to 1 part per million (ppm), as this is only a survey technique. Attaining 1 ppb would require substantial equipment upgrades. CDH concurred on the change, as the data is intended for EPA quality Level 1 or 2 decision

making with respect to the design of a surficial soil sampling grid. 2) Regarding open hole packer testing, substitute slug tests in completed monitor wells, as this would essentially obtain the same point estimate of hydraulic conductivity and reduce costs. CDH initially felt this would be acceptable, but later decided to research this issue further. If approved, both changes would be officially submitted as a TM.

Planned Work for November

Continue work on the Work Plan Implementation Management Plan for OU 7 and training activities needed to be completed prior to the commencement of field work.

Commence field sampling for the OU 7 Phase I RFI/RI Work Plan.

Problems

None

Open Items

None

2.8 OU 8 - 700 AREA

The 24 IHSSs which constitute OU 8 encompass separate sites inside and around the production area of the RFP. Contamination sources within the various IHSSs include above ground and underground tanks, equipment washing areas, and releases inside buildings that potentially affected areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and in some cases through precipitation runoff. The chemical composition of the contaminants also varies widely between the IHSSs, ranging from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

During April 1992, 14 IHSSs were deleted from OU 8 and added to OU 9 as part of an IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. The IHSSs that were transferred to OU 9 include: 123.2-Valve Vault West of Building 707, 125-Holding Tank, 126.1 and 126.2-Out-of-Service Process Waste Tanks, 127-Low-Level Radioactive Waste Leak, 132-Radioactive Site - 700 Area Site #4, 146.1-146.6-Concrete Process Waste Tanks, 149-Effluent Pipe, 159-Radioactive Site Building 559. These IHSS changes were recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992.

Scope of Work Changes This Period	None	
Technical Approach Changes This Period	None	
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	01 May 92
October Work Activity Status	Comments from the regulatory agencies and DOE on the OU 8 Draft Phase I RFI/RI Work Plan were addressed, and the Work Plan was revised. The Final Phase I RFI/RI Work Plan began DOE internal review and final comment on October 30, 1992. DOE will complete review of the Work Plan and deliver it to the regulatory agencies on December 1, 1992, the extended IAG milestone date.	
Planned Work for November	Address comments from DOE concerning the draft Final Phase I RFI/RI Work Plan prior to submittal to the regulatory agencies on December 1, 1992.	
Problems	Field work to complete the implementation of the Work Plan as scheduled is in jeopardy due to funding limitations. The two remaining IAG milestones scheduled in FY94 will require rescheduling.	
Open Items	The field work schedule for the Industrial Area OUs (8, 9, 10, 12, 13, 14, and 15) is under review.	

2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This activity involves characterizing a series of tanks and associated process waste lines. The Original Process Waste Lines (OPWL) consisted of a system of 57 designated pipe sections extending between 73 tanks and 24 buildings connected by 35,000 feet of buried pipeline that transferred process wastes from point of origin to onsite treatment plants. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced over the 1975-1983 period by the new process waste system. Some tanks and lines from the original system have been incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including pickling liquor from foundry operations, medical decontamination fluids, miscellaneous laboratory liquids from Building 123, and laundry effluent from Buildings 730 and 778. The RFI/RI plan includes inspection and sampling of the OPWL tanks and pipelines which are accessible, and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred, near pipe joints and valves, at approximately 200-foot intervals along the pipelines, and by installing borings around the outdoor. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the RFI/RI will determine the need for interim and/or final remediation action.

During April 1992, 20 IHSSs were deleted from OUs 8, 10, 12, 13, and 15, and added to OU 9 as part of a IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. The IHSSs that were transferred to OU 9 include: 123.2-Valve Vault West of Building 707, 125-Holding Tank, 126.1 and 126.2-Out-of-Service Process Waste Tanks, 127-Low-Level Radioactive Waste Leak, 132-Radioactive Site - 700 Area Site #4, 146.1-146.6-Concrete Process Waste Tanks, 149-Effluent Pipe, 159-Radioactive Site Building 559, 124.1-124.3-Radioactive Liquid Waste Storage Tanks, 147.1-Process Waste Leaks/Maas Area, 122-Underground Concrete Tank, and 215-Tank T-40.

The above IHSSs all constitute part of the Original Process Waste Lines and will be investigated and remediated as such. These IHSS changes were recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992.

Scope of Work Changes This Period	None	
Technical Approach Changes This Period	None	
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
	Submit Final Phase I RFI/RI Work Plan	26 Nov 91
October Work Activity Status	The solicitation for Best and Final Proposals for implementation of the OU 9 Draft Phase I RFI/RI Work Plan was canceled. A minimum level of effort for project management tasks only are currently planned for FY93.	

Planned Work for November	None
Problems	None
Open Items	The field work schedule for the IA OUs (8, 9, 10, 12, 13, 14, and 15) is under review.

2.10 OU 10 - OTHER OUTSIDE CLOSURES

OU 10 is made up of 15 IHSSs scattered throughout the plant, which consist of various hazardous waste units. Six of the IHSSs are located in the PA, two are located in the buffer zone near the present landfill, and the remaining seven IHSSs are located near various buildings throughout the plant. The types of wastes identified at these sites range from pondcrete/saltcrete storage and drum storage to a utilization yard with waste spills. A Final Phase I RFI/RI Work Plan is currently in preparation. The primary components of the RFI/RI Work Plan for OU 10 will be an FSP, Baseline Risk Assessment Plan (BRAP), and an EE Work Plan. IRA is scheduled to begin in early 1998.

Three additional IHSSs were transferred from other OUs to OU 10 after the Draft RFI/RI Work Plan was completed in FY90. The Draft Work Plan was based on the draft IAG that was modified during final IAG negotiations. A contract modification was initiated to incorporate the three IHSSs into the Draft Work Plan and to perform general upgrades to the plan.

During April 1992 IHSSs 124.1-124.3, the Radioactive Liquid Waste Storage Tanks were deleted from OU 10 and added to OU 9 as part of an IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992.

Scope of Work Changes This Period	None	
Technical Approach Changes This Period	None	
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	27 Nov 91
	Submit Final Phase I RFI/RI Work Plan	01 May 92
October Work Activity Status	Responses to Final Phase I RFI/RI Work Plan comments from the regulatory agencies were prepared. Conditional approval of the final Work Plan was granted on September 15, 1992. All comments and issues regarding the conditional approval have been resolved.	
Planned Work for November	Address the conditions for approval of the Final Phase I RFI/RI Work Plan from CDH.	
Problems	None	
Opern Items	The field work schedule for the IA OUs (8, 9, 10, 12, 13, 14, and 15) is under review.	

2.11 OU 11 - WEST SPRAY FIELD

The West Spray Field is located within the RFP buffer zone immediately west of the plant security area. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from solar evaporation ponds 207-B North and Center (contaminated ground water in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105.1 acres, 38.3 of which received direct application of hazardous waste. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and ground water.

Scope Changes This Period	None	
Technical Approach Changes This Period	None	
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
	Submit Final Phase I RFI/RI Work Plan	02 Jan 92
October Work Activity Status	A proposal was made to streamline the field sampling in OU 11. CDH commented on this proposal by stating that the minimum data necessary to support a No Further Action Justification (NFAJ) would be at the same level required to support a risk assessment. CDH agreed that limiting field operations to a single phase would be mutually beneficial, and agreed to attend a scoping meeting with DOE and EG&G in early December to assist in developing an acceptable field sampling scope. The usability of the HPGe detector data for risk assessment is currently being investigated. If the HPGe detector data is not acceptable for risk assessment, then the applicability of this technique with respect to new streamlining guidance needs to be evaluated.	
Planned Work for November	Continue to investigate the usability of the HPGe detector data for risk assessment.	
Problems	None	
Open Items	None	

2.12 OU 12 - 400/800 AREA

The 400/800 Area involves assessment and remediation of the 11 IHSSs at the 400/800 Area, including: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - Northeast, South, and West of Building 460 (IHSSs 136.1, 136.2, and 136.3); Process Waste Leak - Owen Area (147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and an HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by EPA and CDH, followed by a ROD, release to the public, and implementation of the plan.

During April 1992, IHSS 147.1 (the Process Waste Leaks-Maas Area), was deleted from OU 12 and added to OU 9 as part of an IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992.

Scope of Work Changes This Period	None	
Technical Approach Changes This Period	None	
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work plan	08 May 92 05 Oct 92
October Work Activity Status	Comment response and resolution was completed for the OU 12 Final RFI/RI Work Plan, and the document went through review and was submitted to the regulatory agencies on October 5, 1992, the IAG milestone date.	
Planned Work for November	None	
Problems	None	
Open Items	The field work schedule for the IA OUs (8, 9, 10, 12, 13, 14, and 15) is under review.	

2.13 OU 13 - 100 AREA

Clean up of the 100 Area involves the assessment and remediation of 14 IHSSs including: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2, and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); and the Hydrogen Peroxide Spill (IHSS 191).

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and an HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by EPA and CDH, followed by a ROD, release to the public, and implementation of the plan.

During April 1992, IHSS 122, the Underground Concrete Tank, was deleted from OU 13 and added to OU 9 as part of an IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992.

Scope of Work Changes This Period

Fifty-four surface soil samples were added in the Stage I sampling plan. This number is not final, as the Work Plan has not been approved.

Technical Approach Changes This Peiod

None

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	15 May 92
Submit Final Phase I RFI/ RI Work Plan	12 Oct 92

October Work Activity Status

Work continued on resolving OU 13 Final Phase I RFI/RI Work Plan comments. DOE completed review and provided comments on the revised draft. Comments were completed and consolidated on October 2, 1992. The second review was completed on October 5, 1992. The Final Phase I RFI/RI Work Plan was submitted to the regulatory agencies on October 9, 1992, the IAG milestone date. The regulatory agencies are scheduled to complete their review of the Work Plan and provide comments and/or approval of the Work Plan by November 10, 1992.

Planned Work for November

Resolve any concerns or comments concerning the Final Phase I RFI/RI Work Plan made by the regulatory agencies.

Problems

CDH has indicated that they may not approve the Work Plan as submitted. They want to see an expansion of the Field Sampling Plan (FSP) including a more comprehensive surficial soils sampling plan. In addition, the lingering question of

sitewide ARARs versus chemical benchmarks and approval of Standard Operating Procedures (SOPs) for the HPGe need to be addressed.

Open Items

The field work schedule for the IA OUs (8, 9, 12, 13, and 14) is under review.

2.14 OU 14 - RADIOACTIVE SITES

Work at the "Radioactive Sites" involves the assessment and remediation of eight IHSSs, including: Radioactive Site - 700 Area Site #1 and Site #2 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSSs 156.1); Building 444 Parking Lot (IHSS 160) and Building 664 (IHSS 161); and Radioactive Site - 700 Area Site #2 (IHSS 162); and Radioactive Sites - 800 Area, which includes the Concrete Slab, Building 886 Spills, and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and an HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as a subsequent phase to the assessment phase.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and feasibility study of the project. This process includes review and approval by EPA and CDH, followed by a ROD, release to the public, and implementation of the plan.

Scope of Work Changes This Period	None	
Technical Approach Changes This Period	None	
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan	26 Jun 92 19 Oct 92
October Work Activity Status	OU 14 Final Phase I RFI/RI Work Plan comments from the regulatory agencies were incorporated into the Work Plan. The Final Work Plan was delivered to the regulatory agencies on October 19, 1992, the IAG milestone date. The regulatory agencies are reviewing the Work Plan, and approval is scheduled by November 17, 1992.	
Planned Work for November	Resolve any concerns or comments concerning the Final Phase I RFI/RI Work Plan made by the regulatory agencies.	
Problems	None	
Opern Items	The field work schedule for the IA OUs (8, 9, 10, 12, 13, 14, and 15) is under review.	

2.15 OU 15 - INSIDE BUILDING CLOSURES

OU 15 is composed of six IHSSs including: Building 881 Drum Storage Area; Building 865 Drum Storage Area; Building 883 Drum Storage Area; Unit 45, Original Uranium Chip Roaster; Unit 26, Building 881 Drum Storage; and Unit 32, Building 881 - Cyanide Bench Scale Treatment. OU 15 will undergo RCRA closure of all IHSSs. The six IHSSs are currently listed as RCRA interim status units. Closure Plans for the facilities were submitted to CDH in 1988 and again in 1989. The major activity proposed is characterization and decontamination, if applicable, of the concrete floors at the indoor facilities. Drums and dumpsters containing solids and liquids were stored at these facilities. Types of waste included oils, coolants, and solvents containing chlorinated hydrocarbons (RCRA F001 and F002 wastes) and waste paints and waste metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium.

During April 1992, IHSS 215, Unit 55.13-Tank T-40, was deleted from OU 15 and added to OU 9 as part of an IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992.

Scope of Work Changes This Period	None	
Technical Approach Changes This Period	None	
IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan Submit Final Phase I RFI/RI Work Plan	01 Jun 92 26 Oct 92
October Work Activity Status	Comments on the Draft Phase I RFI/RI Work Plan from the regulatory agencies were incorporated into the Final Phase I RFI/RI Work Plan submitted to the regulatory agencies on October 26, 1992, the IAG milestone date.	
Planned Work for November	A tour of OU 15 will be completed by DOE/RFO, EPA, and CDH. Concerns or comments from the regulatory agencies regarding the Final Phase I RFI/RI Work Plan will be addressed.	
Problems	None	
Open Items	The field work schedule for the IA OUs (8, 9, 10, 12, 13, 14, and 15) is under review.	

2.16 OU 16 - LOW PRIORITY SITES

This assessment activity consists of preparing a "No Further Action Justification (NFAJ) Document" for seven IHSSs: Solvent Spill, Antifreeze Discharge, Steam Condensate Leaks, Nickel Carbonyl Disposal, Water Treatment Plant Backwash Pond, and Scrap Metal Sites. In addition, the draft document must be reviewed, comments resolved, and the draft finalized. EPA will then review the final draft NFAJ Document.

Scope of Work Changes This Period	None
Technical Approach Changes This Period	None
IAG Milestone Accomplishments	Submit Draft No Further Action Justification Document — 04 Mar 92 Submit Final No Further Action Justification Document — 30 July 92
October Work Activity Status	The NFAJ Document was submitted to the regulatory agencies on July 30, 1992, the IAG milestone. The document was revised to incorporate comments from the regulatory agencies, and was delivered to the regulatory agencies on October 16, 1992. No further action is planned on OU 16.
Planned Work for November	None
Problems	None
Open Items	None

2.17 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that encompass a wide variety of plans, procedures, reports, studies, and other activities required by the IAG and that apply to RFP ER activities in general. The activities include, but are not limited to, the HSP, a Sampling and Analysis Plan, a Plan for Prevention of Contaminant Dispersion, the Community Relations Plan, the Discharge Limits for Radionuclides Work Plan, Treatability Study deliverables, the Background Study Plan, Administrative Record, State Response (support for CDH oversight), Historical Release Report, Operations Management, Decontamination Facilities, contractor yard support, ER Waste handling facilities, geologic characterization, hydrogeologic characterization, and ground water monitoring.

Scope of Work Changes This Period

None

Technical Approach Changes This Peiod

None

IAG Milestone Accomplishments

Submit Draft Background Study Report (Water)	15 Dec 89
Submit Draft Background Study Report (Soils)	15 Dec 89
Submit Draft Community Survey Plan	23 Jan 90
Submit Final Community Survey Plan	22 Mar 90
Submit Draft HSP	15 Aug 90
Submit Draft Quality Assurance Project Plan (QAPP)	29 Aug 90
Submit Draft SOPs	29 Aug 90
Submit Draft Plan for Prevention of Contaminant Dispersion (PPCD)	19 Sep 90
Submit Draft Treatability Study Plan	21 Sep 90
Submit Draft Community Relations Plan (CRP)	01 Nov 90
Submit Final HSP	12 Nov 90
Submit Revised Background Study Report	21 Dec 90
Submit Final CRP	22 Jan 91
Submit Final QAPP	01 Mar 91
Submit Final SOPs	01 Mar 91
Submit Draft Discharge Limits Radionuclides Plan (DLRP)	05 Apr 91
Submit CRP RS	21 Jun 91
Submit Final Treatability Study Plan	03 Jun 91
Submit Final PPCD	22 Jul 91
Submit Final DLRP	16 Sep 91
Submit Final PPCD and RS	25 Nov 91
Submit Draft Historical Release Report (HRR)	08 Jan 92
Submit RS for DLRP	31 Jan 92
Submit Final HRR	03 Jun 92

October Work Activity Status

Community Relations Technical Review Group Monthly Meeting. On October 29, 1992, a meeting of the TRG was held at the Westminster City Hall. The TRG is comprised of members from local municipalities and environmental groups and is included in the IAG as part of the Community Relations Plan. In addition to DOE and EG&G, representatives from EPA, CDH, USGS, and the Colorado School of Mines were in

attendance. Two documents were presented at this meeting: (1) A comprehensive overview of the OU 1 881 Hillside Phase III Draft - RFI/RI Report was presented to the group for review and comment, and (2) the OU 2 Pilot Test Plan. Review of the plan by the TRG is optional. If the TRG decides to comment on the document, they will submit comments to CDH by approximately November 24, 1992. The TRG comments will be included in the agency comments which are due to DOE/EG&G on November 26, 1992. The final version of this first test plan is scheduled for submittal to EPA and CDH on January 12, 1993. Inspection and system start-up to begin pilot testing in the field is scheduled for September 15, 1992.

Planned Work for November

Community Relations. Continued Community Relations activities include the following:
1) The Technical Review Group monthly meeting is scheduled for Wednesday, November 18, 1992, from 8:30 a.m. -12 noon, at the Westminster City Hall, 4800 West 92nd Avenue, Westminster, CO.

2) The Environmental Restoration (ER) Quarterly Public meeting is scheduled for Tuesday, December 8, 1992, at 7:00 p.m. - 9:00 p.m., at the Denver Marriott West Hotel, Golden, CO.

Treatability Studies.

- Annual Report. A subcontractor is preparing the first draft of the Annual Report on Treatability Studies. The final draft has a deliverable date to the regulatory agencies of March 8, 1993. A number of items are to be addressed in the annual report by agreement with the regulatory agencies; these items will be included in the report.

Problems

None

Open Items

None

SECTION 3. ROUTINE ENVIRONMENTAL MONITORING

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDH upon request from the EM Department and EG&G Rocky Flats, Inc. The schedules are lengthy; therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe field work and to obtain split or duplicate samples.

3.1 SURFACE WATER AND SEDIMENTS

- Each of the Surface Water Stations (approximately 20 stations) are sampled quarterly.
- Each of the Sediment Stations (approximately 10 stations) are sampled quarterly.
- Each surface water and sediment sample is analyzed for the following parameters:

CLP TCL VOAs	Metals CLP TAL and Non-TAL
Field Parameters	Specific Conductivity
Dissolved Oxygen	Major Anions
Radionuclides	Termperature
TDS/TSS	pH
Nutrients	

- Additionally, sediment samples are analyzed for: CLP-Semi VOAs, CLP-Pesticides/PCBs, Herbicides-619

3.2 SOILS

- Each of the Soil Stations (located at 1- and 2-mile radii from the plant center) are sampled annually.
- Each soil sample is analyzed for plutonium and americium.

3.3 GROUND WATER

A total of 410 ground water stations are sampled quarterly; this includes alluvial wells, bedrock wells, and pre-1986 wells. Approximately one-third of the wells are monitored monthly for water levels.

Each ground water sample is analyzed for CLP, TCL, VOAs, TAL, and metals, as well as the following parameters:

Radiochemical Parameters	Inorganic Parameters	Field Parameters
Gross Alpha	Nitrate/Nitrite	DO
Gross Beta	Total Phosphorous	Specific Conductivity
Plutonium	Ortho-Phosphate	Temperature
Americium	Ammonia	Turbidity
Strontium	TDS	pH
Tritium	Flourine	
Uranium	Sulfate	
Cesium	Carbonate	
	Bicarbonate	

Radiochemical Parameters	Inorganic Parameters	Field Parameters
	TSS	
	Total CLP Metals & additional metals	
	Dissolved CLP & additional metals	
	Cyanide	
	CLP Volatile Organic Constituents	

SECTION 4. CONTRACTOR/SUBCONTRACTOR IDENTIFICATION

Contractors and subcontractors being used on the RFP ER Program and the work they are performing are identified on the following list as required by paragraph 13 of the IAG.

OU	Project	Subcontractor	Sub-Subcontractor	Work Description	Start Date
1	Assessment	Ebasco	Dames & Moore Stoller Corp.	OU 1 RFI/RI field work (drilling, well development/ completion, sampling) and RI report., and CMS/FS report	Apr 91
1	Remediation	Bruner		OU 1 IRA ion exchange system	Feb 91
1	Remediation	E.T. LaFore		Installation of Phase II-A treatment system equipment for OU 1 IRA	Jun 91
1	Remediation	IT Corporation	CH2MHill/OMT	B-891 Treatment System Operations	
1	Remediation	Jennison		Construct Phase II-B French drain at OU 1 IRA	Aug 91
1	Remediation	P.S.I.		OU 1 IRA UV/Peroxide System	Aug 91
2	Assessment	Woodward-Clyde	Ogden	OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Sep 90
2	Assessment	Ebasco	S.M. Stoller Corp.	Environmental Evaluation	Feb 91
2	Remediation	Stearns Rogers		Performance Specification for Chemical precipitation/membrane/filtration system for South Walnut Creek Phase of OU 2 IRA	Jun 91
2	Remediation	TBD		Mfg/Install chemical precipitation/ filtration unit for South Walnut Creek Phase of OU 2 IRA	Dec 91
3	Assessment	IT Corporation	CH2M Hill	OU 3 Field Work and RI Report	Apr 92
3	Assessment	IT Corporation	USGS	OU 3 Reservoir Sediment Sampling and Report	Aug 92
3	Assessment	MRI		Wind Tunnel/Soil Resuspension Study	Aug 92
4	Assessment	Applied Environment		Implement the Phase I RFI/RI Work Plan, includes drilling, sampling radiation surveys, etc.	Aug 92

OU	Project	Subcontractor	Sub-Subcontractor	Work Description	Start Date
5	Assessment	ASI	Dames & Moore Blackhawk Geoscience Walsh & Assoc. Fugro Geosciences Lagne Envir. Service Utility Mgmt. Service S.M. Stoller Adv. Terra Testing	Implementation of OU 5 Work Plan (excluding EE)	Jun 92
5	Assessment	S.M. Stoller		Implementation of EE section of OU 5 Work Plan	Sep 92
6	Assessment	Woodward Clyde	Lane, Ogden Geo Environmental	OU 6 RFI/RI Work Plan and Quality Assurance Addendum	Feb 90
6	Assessment	S.M. Stoller		EE	Sep 92
7	Assessment	S.M. Stoller	Walsh & Assoc.	OU 7 RFI/RI Work Plan including EE Plan and QA Addendum	Apr 90
11	Assessment			OU 11 RFI/RI Work Plan including EE Plan and QA Addendum	Oct 91
15	Assessment	S.M. Stoller		OU 15 RFI/RI Work Plan	
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91
SW	PCB Assess.	Ebasco	Stoller Corporation	Prepare PCB Assessment Report	Jan 92
SW	Adm. Record	QuantaLex		Maintain IAG Adminstrative Record	Oct 90
SW	Geo. Char.	ASI		Geologic Characterization, Data Base, and graphics	Feb 90
SW	Monitoring	IT Corporation		Analytical Services for ground water, surface water, and sediment	Jul 90
SW	PPCD	Ebasco		PPCD	Jun 90
SW	QA	SAIC		Develop and implement QA program and field operations oversight	Dec 90
PM	Support	Ebasco	Stoller Corporation	Program Management Support	Feb 90

ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirements
BOA	Basic Ordering Agreement
BRAP	Baseline Risk Assessment Plan
CAD	Corrective Active Decision
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Contract Laboratory Program
CMS	Corrective Measures Study
CRP	Community Relations Plan
D&D	Decontamination and Disposition
DLRP	Discharge Limits Radionuclides Plan
DOE	Department of Energy
E&WM	Environmental and Waste Management
EE	Environmental Evaluation
EPA	Environmental Protection Agency
ER	Environmental Restoration
FS	Feasibility Study
FSP	Field Study Plan
FTU	Field Treatability Unit
GAC	Granular Activated Carbon
gpm	Gallons per minute
HHRA	Human Health Risk Assessment
HPGe	High Purity Germanium Survey
HRR	Historical Release Report
HSP	Health and Safety Plan
IAG	Inter-Agency Agreement
IHSS	Individual Hazardous Substance Site
IM	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
ITS	Interceptor Trench System
IWCP	Integrated Work Control Package
LL	Low-level
MTS	Master Task Subcontract
NEPA	National Environmental Policy Act
NTS	Nevada Test Site
OPWL	Original Process Waste Line
OU	Operable Unit
PA	Protected Area
pCi/g	Picocuries per gram
PPCD	Plan for Prevention of Contaminant Dispersion
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RFEDS	Rocky Flats Environmental Database System
RFI	RCRA Facilities Investigation
RFP	Rocky Flats Plant
RI	Remedial Investigation
ROD	Record of Decision
RS	Responsiveness Summary

SO	Systems Operation
SOP	Standard Operating Procedure
SOW	Statement of Work
TAL	Target Analyte List
TCL	Target Compound List
TDS	Total Dissolved Solids
TM	Technical Memorandum
TRG	Technical Review Group
TRU	Transuranic
TSS	Total Suspended Solids
VOA	Volatile Organic Analyte
VOC	Volatile Organic Compound